

FIG. 1

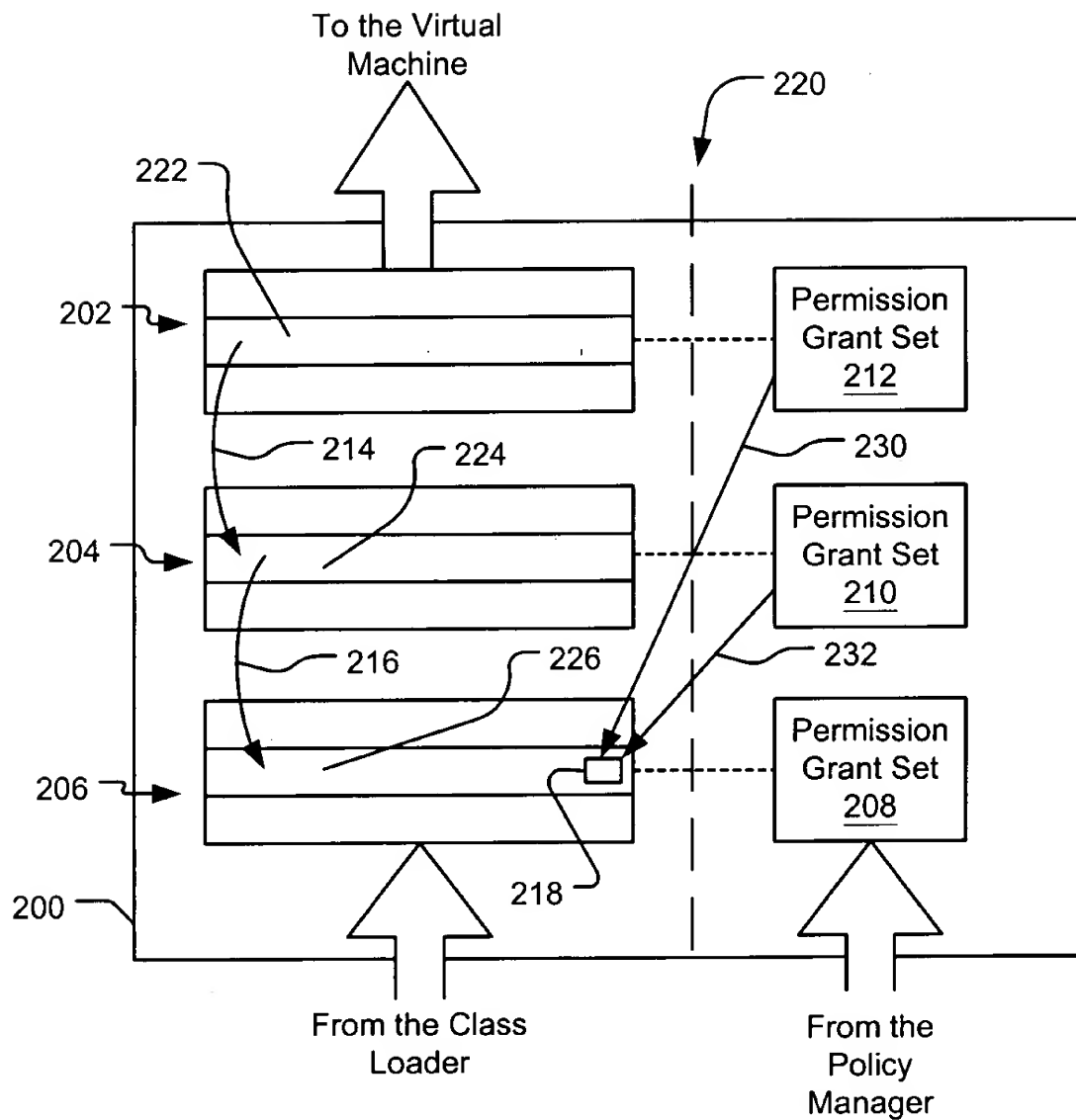


FIG. 2A

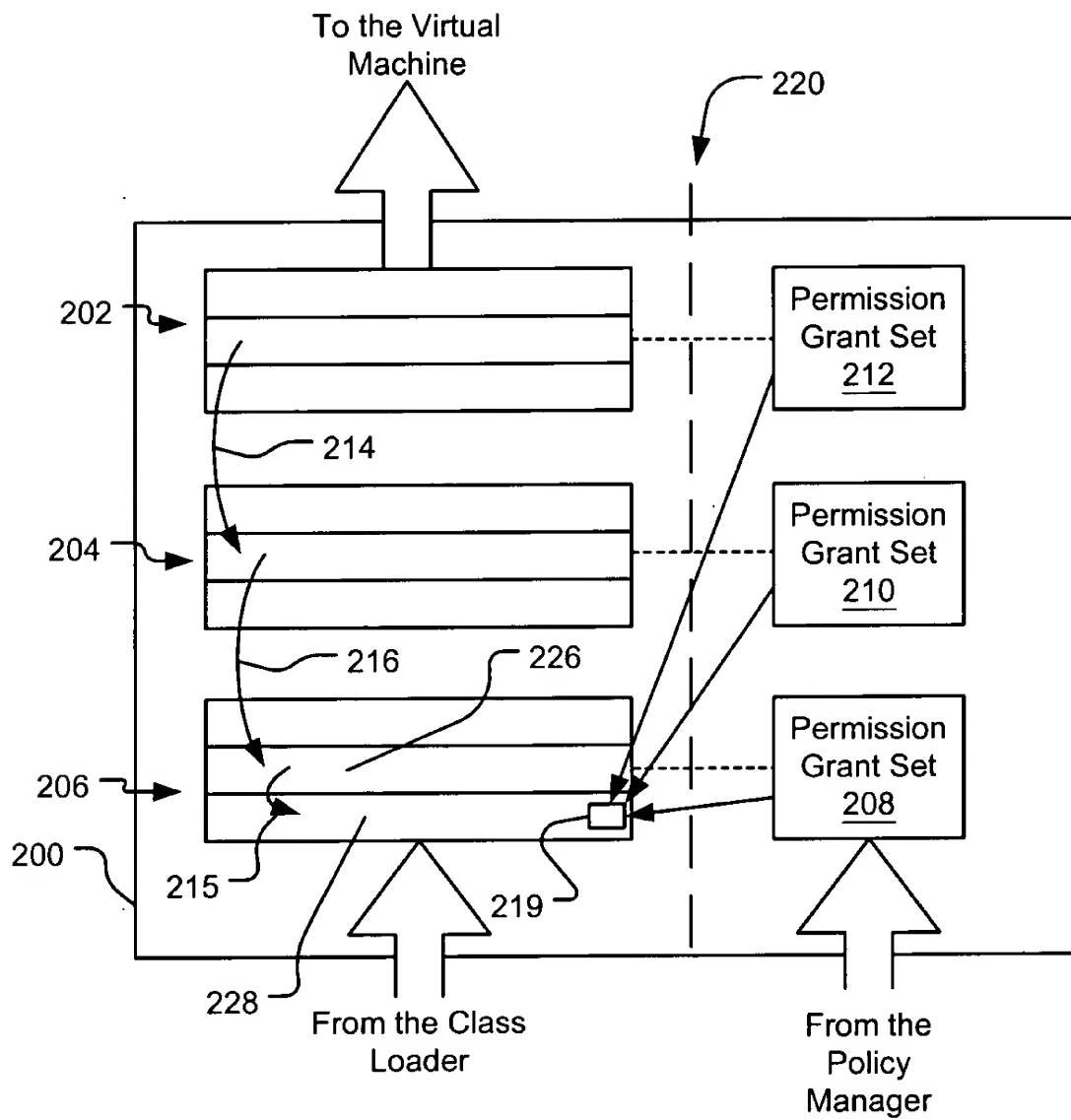


FIG. 2B

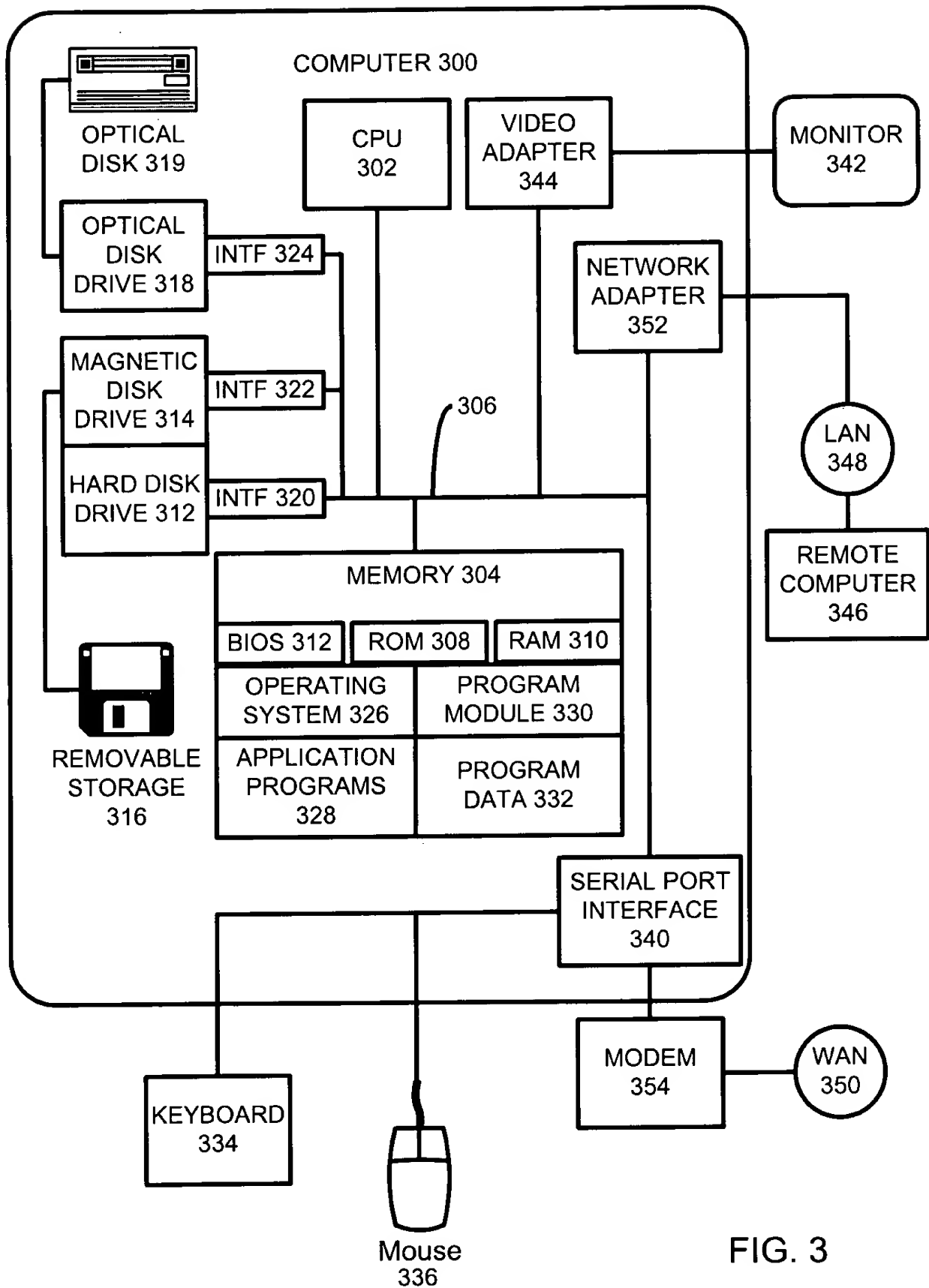


FIG. 3

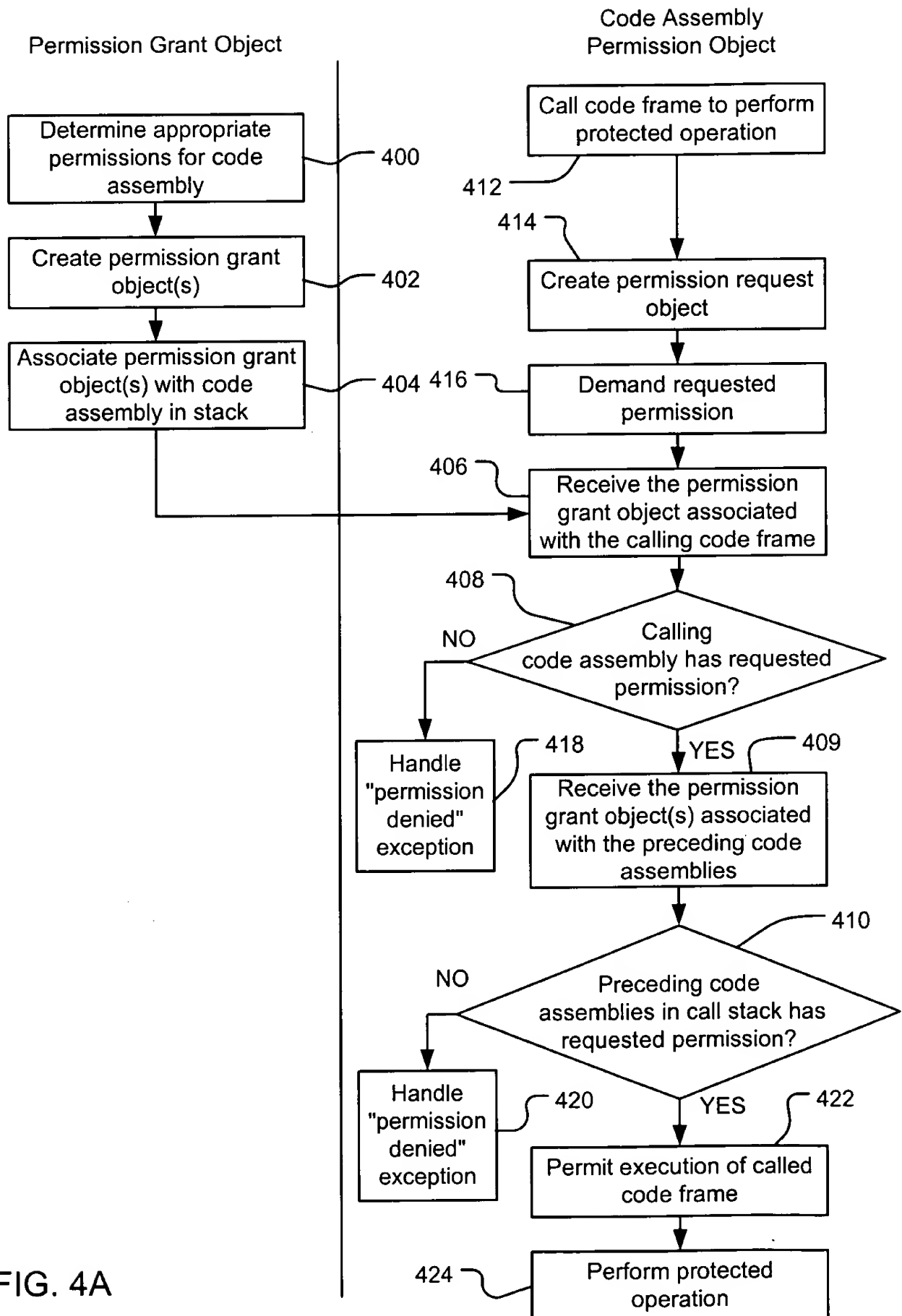


FIG. 4A

Permission Grant Object

Code Assembly Permission Object

Determine appropriate permissions for code assembly

Create permission grant object(s)

Associate permission grant object(s) with code assembly in stack

Compute intersection of all permission grant objects of a given type in call stack

Call code frame to perform protected operation

Create permission request object

Demand requested permission

Cache intersection of all permission grant objects has requested permission?

Perform alternative processing (e.g., starting with operation 406 of FIG. 4A)

Permit execution of called code frame

Perform protected operation

FIG. 4B

FIG. 4B is a flowchart illustrating a process for handling permission requests. The process begins with a vertical line separating the 'Permission Grant Object' column on the left from the 'Code Assembly Permission Object' column on the right. In the 'Permission Grant Object' column, the process starts with 'Determine appropriate permissions for code assembly' (400), followed by 'Create permission grant object(s)' (402), then 'Associate permission grant object(s) with code assembly in stack' (404). These steps lead to 'Compute intersection of all permission grant objects of a given type in call stack' (432). In the 'Code Assembly Permission Object' column, the process starts with 'Call code frame to perform protected operation' (412), followed by 'Create permission request object' (414), then 'Demand requested permission' (416). These steps lead to a decision diamond (430) asking 'Cache intersection of all permission grant objects has requested permission?'. If the answer is 'NO', the process goes to 'Perform alternative processing (e.g., starting with operation 406 of FIG. 4A)' (418). If the answer is 'YES', the process goes to 'Permit execution of called code frame' (422), which then leads to 'Perform protected operation' (424).

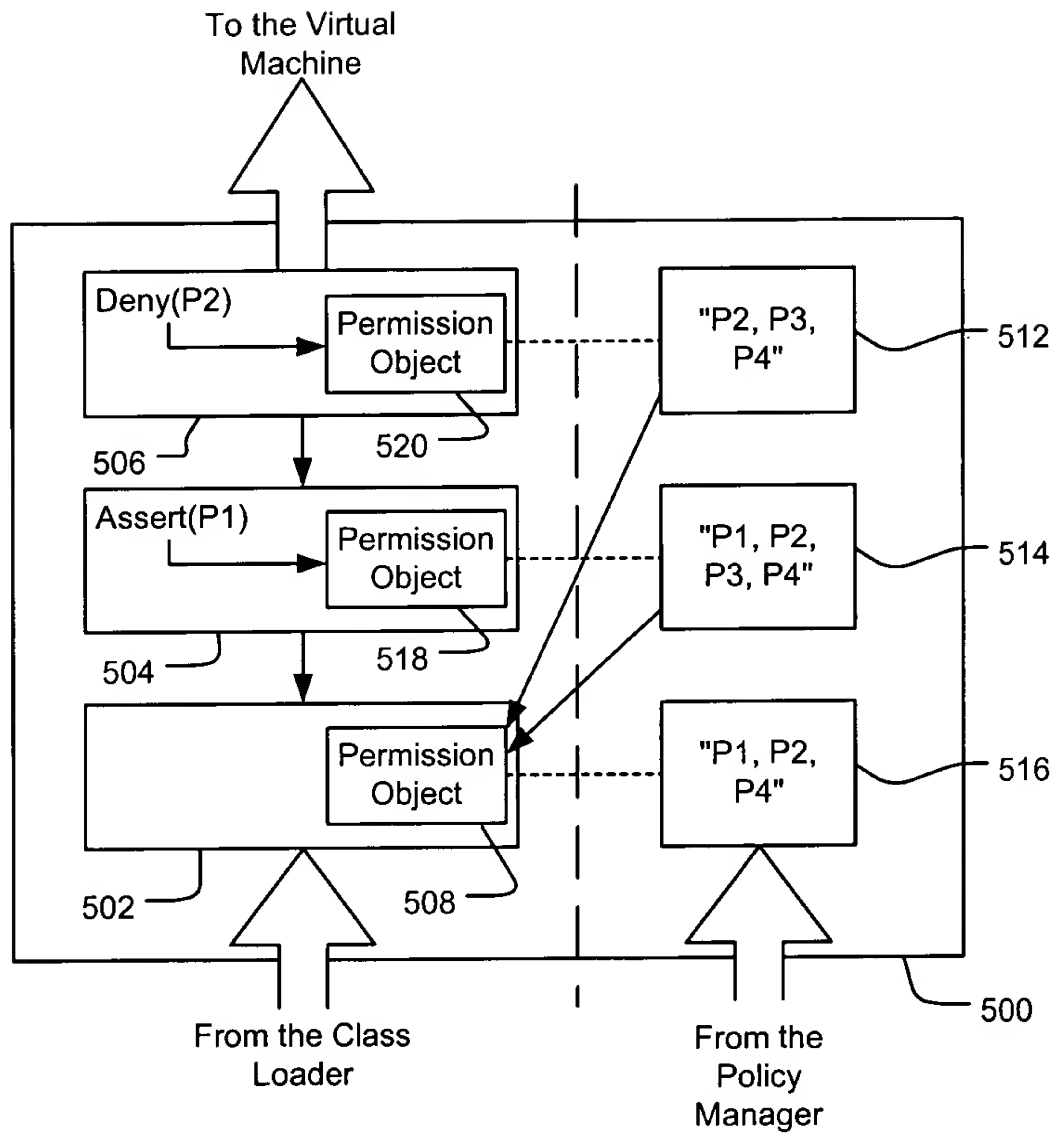


FIG. 5

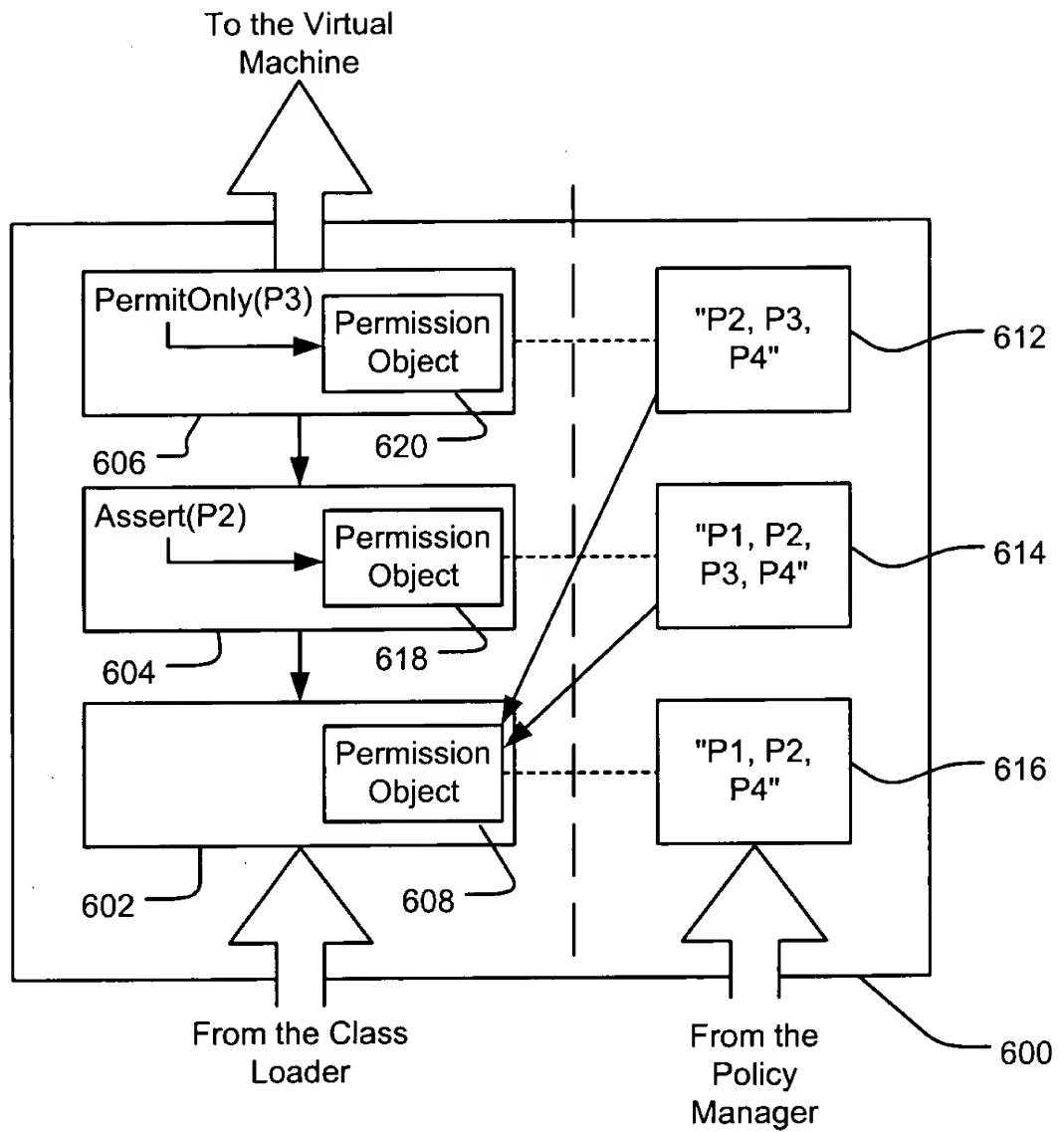


FIG. 6